New Insight into the Creative Urban Clusters
(The potentials of joint space between Naqhsh- e Jahan Square and the Art University of Isfahan as an attractive place for the creative class)*

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Abstract

The creative city is a place for the development of creativity in dynamic of community's creative clusters; which these clusters maintain and nurture creative class of experts with the wide range of skills. Universities can provide a setting for interaction of creative talent with intellectual power within a community, such spaces should be regarded as a valuable asset for a city that can be used as a creative cluster to achieve a creative city's goals. The purpose of this paper was to analyse the joint space between the Art University of Isfahan and Naqhsh- e Jahan Square as a cluster for creativity. Analysis focused on potential of open spaces for nurturing a creative class and promoting a culture of creativity. In this regard, this paper seeks to answer these questions: "What criteria do Naqhsh- e Jahan Square and the Art University of Isfahan as urban spaces have in order to adapt to urban creative clusters? What potential does the joint space between the Art University of Isfahan and Naqhsh- e Jahan Square have in order to convert to creative cluster? And how and how much this space has been successful in attracting and promoting the creative class?". In this regard, these questions of paper were addressed through a qualitative, theoretical study, using analysis of the related literature, and the term creative class is defined followed by investigation of the role of urban creative clusters to attract the creative class in a society. Then by analysing the Naqhsh- e Jahan Square and the Art University of Isfahan as two creative clusters; by qualitative approach and by analysing the interactive relationship between these clusters extracted the absorbent place criteria of creative class in the joint space between the Art University of Isfahan and Naqhsh- e Jahan Square. In the end, with quantitative analysis the permeability of Naqhsh- e Jahan Square and the Art University of Isfahan by the joint space between them as a place with potential of absorbing creative class has been done. The final outcome of this article is to achieve the absorbent place criteria of creative class in the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan and in this context, the proposed solutions such as promoting social interaction, increasing security and improving user manipulation in order to generalizing the open space of university with the aim of transforming the joint space into the commissure of university and city, will be presented.

Keywords

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Introduction

Creativity is the idea of creating new ideas on an eminent level which consists of the ability to innovate, adaptation and sensibility to the existing beliefs and it gives a person the ability to think about other findings to reach beneficial achievements for him/herself and others, utilizing rational and wise thoughts.A vibrant creative community serves to nurture personal growth among its members and brilliance in terms of cultural and technological developments. It can also develop jobs and wealth and is receptive the diverse of lifestyles and cultures (CCTF, 2008: 4). The social conditions of the modern world no longer accommodate individual creative thought. From the socio-cultural perspective, creativity also needs a social context.

About creative cities and clusters Debord in 1967 in a publication called "Spectacular Capitalism" describes creative areas and cities, for the first time. After that Charles Landry (1995) urban theorist regarding the concept of creative city in the book "creative city" says that the cities have a vital resource and that is their people. Richard Florida, theorist of "creative city" discussed about the concept of "creative class" for the first time in his book, "The rise of the creative class" book, in 2002. The theory of Florida is that the economic success of a city is not based on the strategies of traditional economic development; but it depends on the attraction of creative talent (Donegan, Lowe, 2008: 46). In 2007, Allen Scott by using the literature that Richard Florida has raised, regarding the cities and creative clusters, raises the issues regarding quality and possibility of changing the available capacities of cities and creative clusters toward more creativity; and introduce the creativity by using the regional policies as a principle in design (Scott, 2006).

The creative city is described as a place where innovation emerges in dynamic of creative places. In fact, creative cities and clusters are defined as a reticulated, fluid and open society which is receptive of new people and adapts to new ideas and groups of immigrants and appreciate the diversity of

investments (Landry, 1995). More pleasant and diverse locations attract more skilled and creative people that then channel their creativity towards innovation and growth (Florida, 2005: 87). On the other hand, regions that have more individuals with potential, grow faster and can better attract talent to themselves (Ibid: 25).

University, as a cultivator of talents and skills in fields of theoretical and practical specialties, is considered as a gathering space for the society's creative class. Unfortunately, universities of our country are enclosed within fences and often isolated from other areas of the city and their doors are often closed even to scholars from other academic centres, therefore they don't use their potential to enhance creativity and optimum use of the creative class (Rahgozar, Shahabian, 2012: 72, 73). This study investigates the role of two creative clusters of Isfahan City to attract the creative class in the joint space1 between them. The goal of this research is to investigate the effectiveness of campus spaces in relation to the creative population. In this regard, a study of the relationship between the Art University of Isfahan and Naqhsh- e Jahan Square was done to analyse the potential of these spaces as a creative cluster. The research also tries to survey the absorbent place criteria of creative class and offers solutions in order to convert the joint space as a place with the potential of attracting the creative class and the public, and to promote a culture of creativity in order to achieve the effective relationship between the university and the city.

Research methodology

Despite the fact that city of Isfahan, has a number of valuable historical attractions, Naqhsh- e Jahan Square noteworthy of all Esfahan's attractions, the city has higher potentials to transform into a creative city. So, with assumption that most of the times a whole city cannot be a creative city, but one district or more than a district of that can be as a creative environment, and can be called as a creative clusters (Montgomery, 1998: 98), it is proceeded to

investigate the public urban spaces in the role of urban creative cluster. The features of Naqhsh- e Jahan Square and the Art University of Isfahan in comparative form with the features of urban creative clusters are investigated. Therefore, if in the joint space between two spaces, the potential of urban creative clusters is able to be identified, it can be claimed that the mentioned space as a joint space can be effective in attraction of creative class of society. So the purpose of this study is to investigate the following steps (Diagram 1):

This paper by defining the creative class and absorbent place criteria of the creative class, sought to answer the following question:

• What standards do the Naqhsh- e Jahan Square and the Art University of Isfahan have as the urban spaces regarding being compatible with urban creative clusters?

• What potentials does the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan has in order to convert to a creative cluster?

• How and how much this space has been successful in attraction and promotion of creative class?

In order to answer this research question, the following steps were taken. This study in the first step, with presenting a definition from the 'creative class' with a qualitative approach by the theoretical study

and the analysis method of subject literature content, proceeds to investigate the role of urban creative clusters in attraction of creative class of society and investigate the environmental components roles of these locations in attraction of creative class. In the second step, a qualitative approach was applied with logical reasoning. A comparative investigation was conducted regarding criteria existing in Naqhsh- e Jahan Square and the Art University of Isfahan as two creative clusters in Isfahan City, using information supplied by the municipality, photography, and long-term observation of users' behaviour and an activity map, in order to adaption with components of urban creative clusters. Then the absorbent place potentials of creative class in the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan are extracted which led to the initial theoretical framework. In the third step with a quantitative approach and survey method, it proceeds to analyse the adjusted questionnaires based on the theoretical framework, by using the statistical soft wares of EQS6 and SPSS to investigate significant rate of absorbent place criteria of creative class. These standards by using the factor analysis of place absorbents based on the priority are classified; and the most important absorbent place criteria of creative class are extracted.
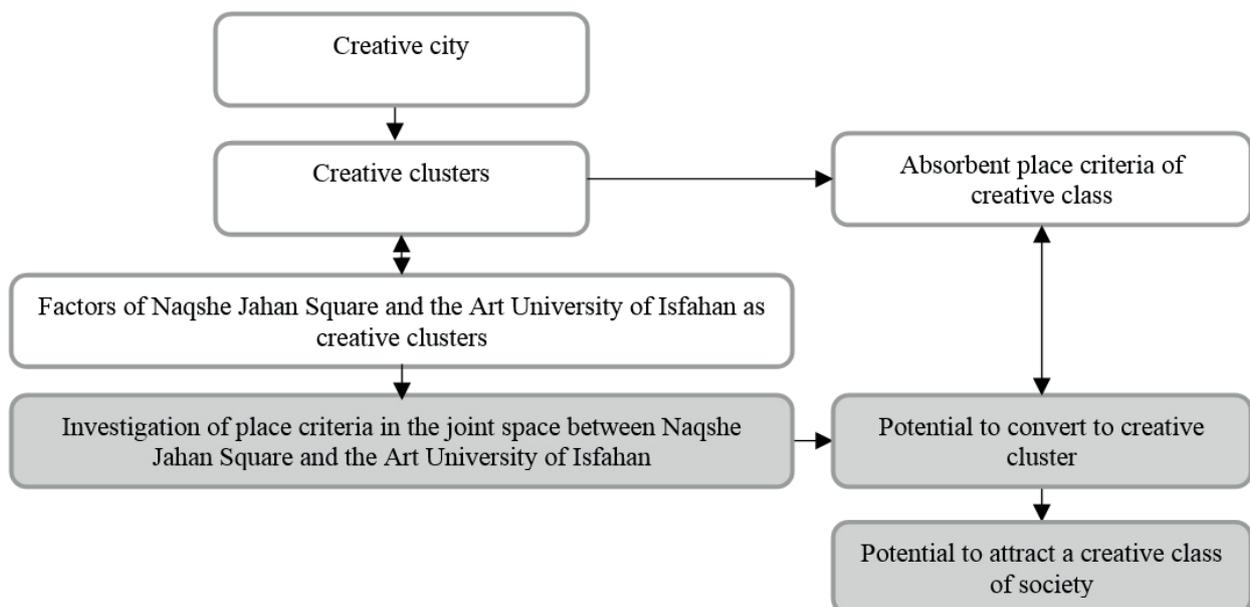

Diagram 1. The general direction of research. Source: authors.

Finally, by analysis of information in Naqhsh- e Jahan Square and the Art University of Isfahan, potential of the joint space is investigated in order to convert the space into a cluster to attract the creative class.

Research theoretical framework
A Creative City

A creative city describes a city complex which is built on a solid social and cultural infrastructure and excellent cultural facilities tend to attract creative people and funding opportunities (Garnham, 1990). The theory of creative city attempts to improve the qualities that make the imagination of a city more beautiful for citizens. The creative is assessed as a pre context and a component of the general intelligence; and increase of innovation and producing knowledge are considered as the indexes of social promotion evaluation in this way. A creative city can be regarded from 4 perspectives:

• **An artistic and cultural infrastructure:** The focus of most urban strategies and plans is on creativity, to promote arts and cultural activities by supporting arts and artists and providing the necessary institutional infrastructure.

• **A creative Economy:** The focus of this approach has three key elements; cultural and artistic heritage, entertainment and media, provision of creative services to occupations. These services are the most important elements in a creative economy as they can make any service or product valuable.

• **A creative city from the perspective of a creative class:** Florida's discussion (2002) of creative class is based on observation of the creative role of people in a creative era. He believes that unlike past foundations of societies, based on an economy driven and big corporations are stable and in contrast, people will play a larger part in the economy. Based on his definition, creative cities are always competing with each other to attract, maintain and develop creative people. In fact, the creative city is a city who its municipality standards is measured by the indexes of creative class (Faist, et al, 2010: 345).

• **Promotion of a culture of creativity:** Creativity of those who live in a city or are responsible ensure its future success. With large and complex cities and the challenge of urban management, cities are gradually becoming laboratories for production of a variety of technological, social and conceptual solutions for growth (Landry, 1995: xiii).

A creative class

Education is more important now than it ever was and success at different levels of school and university is largely associated with class (Florida, 2005: 21). In summary, the theoretical idea of Florida's "creative class" is that the rate of economic growth of a city is directly dependant on concentrations of professionals in advanced technology, artists, musicians, and generally well-educated people. He divides the creative class into two groups; a creative core and a super- creative core; the first group consists of academic staff such as doctors and lawyers that work in a wide range of knowledge-based industries such as financial services, health care, legal and business management. The second group includes a wide range of scientists, engineers, planners, programmers, university professors, poets, novelists, artists, actors, consultants, researchers, analysts and other elites. Florida argues that the first group is involved in creative problem solving, while the second group forms new designs or issues that are quickly transferable and extremely helpful. Characteristics of the creative class are such that its members engage in activities that lead to the creation of "new and creative ways" and are interested in sharing ideologies and pursuing common goals (Cameron, 2011: 282).

Florida demonstrates that creative classes and groups, in addition to career advantages in selection of a living place and work opportunities are sensitive to the spirit, or vibe of a place. The spirit of a place, in addition to having the necessary facilities for individual and family creativity is also depends on having an open and tolerant environment, the presence of other creative people with different

lifestyles, possible challenges and impact on the environment, accompany of old and new and combinative buildings as well as, natural and social spaces. Creative people in a community are looking for many high quality experiences and openness of a society and country to all forms of diversity and an opportunity to prove their identity as creative people. A creative community is the cause of appearance of more space and facilities for visual communication between people (Florida, 2005: 80).

According to Florida's view (2004), a class of society is creative when it has a dynamic, open and growing community and attracts other elites, and a society can attract a creative class witch has three main characteristics: technology, talent and tolerance. These three characteristics are necessary in one place, but aren't in themselves a sufficient condition. In fact, people with technology, talent and tolerance are attracted to places that promise work tolerance and a social environment (Ibid: 34).

The role of creative clusters in attracting creative class
A) Public space as a creative cluster in attracting creative class

As much as a city and its public spaces can influence the social structure into a stagnant and curtailment, it also can increase the cultural creativity and development of the cultural investments levels in society. Urban public spaces, as part of the external open public space where social interaction occurs, are places where people can build new structures and define their identity (Hosseinpoor, et al, 2013: 142). These spaces are places to exchange thoughts and information, providing a place for social networks to form, where people and different social groups contribute to. As people have generated ideas and creativity, through their contribution with each other in these spaces, such spaces are considered more as an experience, rather than a physical space. Creative people need a place to live, work, get inspiration and show their work; public spaces can be a focus for emergence of creativity and a place to show the

creativity of each citizen.

What makes the public spaces more active on a social level, are the physical outlines that provide the context of entering and halting in the space, in which, factors such as accessibility, visual appeal, natural factors and many other factors have an effect on. But what is more effective than the physical dimensions in terms of social interaction is prediction and creation of social events, which at the same time as creating participatory opportunities for social activities, may foster a sense of belonging (Lennard, Lennard, 1984). Montgomery (1998) stated that an important factor contributing to the success of a place is a wide range of activities. Therefore, quality of space in urban public areas plays an important role in attracting and retaining the creative class, and what is important is to keep urban spaces up to date and to adapt according to a society's needs at the time (Osanloo, 2011: 17); in fact, this class prefers innovative, diverse and tolerant environment.

Public spaces are considered the most important factor in a creative city's formation. They can have a significant role as a creative cluster in shaping of a creative city, if they implement characteristics such as participation, giving identity, economical value and urban vitality, diversity, attracting as a factor that gives quality to the public spaces and followed by that, improving the residents' quality of life (Rahmati, et al, 2012: 75). The measures of these standards by considering the view of theorists were assessed that in the format of table 1 is presented (Table 1).

B) Attracting a creative class and promoting the creative culture in a university arena

A universities are valuable assets for a city and serve as a gathering place for people who are creative talent and the intellectual force of a society (Yang, Hua, 2008: 1). Universities are places for the emergence of new ideas, innovations, scientific developments and values; they are places that nurture the creative class of a society and as such should be considered as important for promoting creativity (Rahgozar, Shahabian, 2012:67). Places that attract creative people and promote

rapid and extensive knowledge, will impact on the national economy and regional development (Florida, 2005: 231). Florida (2005) argued that, "universities are valuable, not only in the sense that they produce technology, but more importantly, that they are able to attract and nurture diversity and tolerance". In addition, Landry (1995) notes to the importance of cultural environments, particularly universities in shaping the creative city.

Universities offer many ways to create a genuine sense of community for people and are places that facilitate interaction between people, often in spaces between the buildings. To stimulate such interactions, it is necessary for universities to provide a range of public spaces and activities that support each other (Roberts, 2006: 331); as well as to provide the social and emotional needs of the people who live and work there. Successful academic areas, not only think to meet the needs but also develop facilities. Also, a university is a suitable context to achieve the goals of a creative city.

In addition to accommodating the creative class, the university is a perfect context for creative activities and cultural events in general. This correlation between the activities and urban areas and the residents, causes a boost in the mainstream creativity (Rahgozar & Shahabian, 2012: 67).

In many developed countries, due to relatively

Table 1. Characteristics of urban public space in a role of creative urban cluster. Source: authors

Features of urban public space for development of a creative hub	Criteria	Sources
Participation	Social solidarity;	Jones, et al, 2005
	Face to face interaction;	
	Awareness and exchange of ideas;	
	Aesthetics urban spaces;	
Identity	Local arts, handicrafts and an art index;	Rahmati, et al, 2011: 76
Economic value	Stable and safe place;	Majidfar, Mohammadi, 2010: 19
	Location for exhibitions and galleries, as areas for display;	
	Tourist attraction;	Ahmadi, 2008: 143
	Display and trade of creative products;	
Attraction, Diversity and Urban vitality	Attention to suitable aspects of space like attraction, diversity and vitality;	Ashrafi, Rahnamai, 2007: 28 & Gehl, 2011: 30
	Public space use;	Ranjbar, Mottalaei, 2010: 2 & Hartmann, 2008: 1
	The field of optional activities;	Hartmann, 2008: 1 & Timer, Kate Seymour, 2006: 32
	Aesthetic considerations;	
	Gathering of citizens, reception rate of different social groups;	Timer, Kate Seymour, 2006: 32
	Functional diversity (social, economic and cultural);	Timer, Kate Seymour, 2006: 32 & Sharepoor, 2010, 218
	A place for learning;	Rahmati et al, 2011: 76
	Reception of the surrounding environment;	Rahmati, et al, 2011: 77
	Assess reception rate;	Florida, 2005: 80
	24-hour application;	Hartmann, 2008: 1
	Hosting celebrations and festivals;	
	Safety and security;	
	Easy access.	

good permeability of university boundaries, there is a prominent connection between the university and the public. Also, university's realm, as an urban space, has become a place for interactions among students of different disciplines and the public. This connection has influenced the public's every day's lives and enriched them, acting as a nurturer of a creative soul in the public (Ibid). This is when Iran hasn't managed this need properly.

To improve the performance of university and perception of academicians and society regarding this location, a framework is formulated for students and the other beneficiaries. In this way, it is proceeded to better identifying issues and potential solutions related to establishing the university that is helpful for the creative city aims (Walljasper, 2012). Walljasper (2012) has analyzed the wide range of activities and events

that occur in the university's arena and raises the interview with students and observation of activities. Then he analyses the conditions and available opportunities in several universities, the noted features by him in the table 2 as the effective framework in attraction of creative class in the university has come (Table 2).

Case study (The potentials of joint space between Naqhsh- e Jahan Square and the Art University of Isfahan as a creative urban cluster)

One of the main standards of choosing a city as a creative one, is having the cultural criteria; so most of the metropolises in Iran such as Tehran, Mashhad, Isfahan, Shiraz, Qom and … with cultural properties and historical heritage have the potential of changing to creative city (Keighobadi, et al, 2008: 37).

Table 2. Influential characteristics in attracting creative class at university. Source: Walljasper, 2012.

Scale	Influential characteristics in attracting creative class at university	Criteria
Macro	Interface university with the wider community	Overlap this areas by holding workshops to gather community in this intermediate space;
		Filling the gap between city and university;
	Land use of university area	Adaptive application with presence situation (Architecture and performance);
		Courage students to urban life;
Medium	Information and routing system	Rapid and easy routes within university areas;
		Access to information and rapid transfer to community;
	Access to different spaces of university and retain its circulation	Easy and safe walking, cycling and driving in areas of the university;
		Walking of students between classes;
		Access for emergency vehicles;
		Diverse methods of transport;
Micro	Retain a safe and secure environment	Maintain security of university;
		Lighting at night;
		Physical design of university buildings;
		Transparency rate of ground floor of buildings;
	Creation of successful gathering places	Identification of public and private use of public space of the university;
		Offers to small squares, yards and other main public spaces.

City of Isfahan, known as the cultural capital of Iran, has a significant role in the creative economy by having historical attractions such as Naqhsh- e Jahan Square and cultural craftsman ship such as enamel art, wood carving, Termeh embroidery, and many industries of this type which play a major role in a creative economy. Isfahan is a dynamic, lively, and people-centred city, and has economic, social, and cultural diversity; it is also a historical and scientific city, thus it has the potential to move towards a becoming a creative city.

As the goal of this research is the evaluation of the creative class's attractive location criteria in a specific area of Isfahan, due to the site's placement in vicinity of Naqhsh- e Jahan Square and the Art University of Isfahan, it certainly has the potential to transform into a creative urban cluster and therefore, attract the creative class. Firstly, the features of Naqhsh- e Jahan Square and the Art University of Isfahan in terms of quality are studied with the properties of urban creative clusters comparatively.

According to the conveyed advantages and factors in public urban spaces as a creative urban cluster (see table 1), and comparative analysis between the existing characteristics in the urban public spaces, that are effective in attracting the creative class, and the existing environmental parameters in the Naqhsh- e Jahan Square. Hence, Naqhsh- e Jahan Square can be considered as creative urban cluster (Table 3). The Art University of Isfahan is located among valuable historical buildings making it one of the richest universities in Iran in terms of presenting an ideal, artistic space. The arena of the Art University of Isfahan has been constructed with the aim of preservation and restoration of historic monuments in a historic area located in Tohid-Khaneh building, as a creative cluster it can be helpful to attract a creative class and to promote a culture of creativity. With regard to the raised concepts as the effective standards of attracting the creative class in the university space in the role of urban creative cluster (See also table 2), through comparative study of these standards with the features of the Art University of

Isfahan, the obtained results on analysis can be in the line with reaching this cluster to the creative city standards (Table 4).

The potentials of the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan are investigated (Figure 1) because the Naqhsh- e Jahan Square is raised due to being a transnational and urban public space; and by considering the frameworks activity of square and the events and the environmental features of this space (Table 3) is considerable as an urban creative cluster. This cluster has been able to attract a large number of creative individuals and keeping them interested and create job as well; and as an active creative economic cluster can be raised. In addition, the Art University of Isfahan due to attraction and education of creative class of society and its features (Table 4) is considered as an urban creative cluster. Due to proximity to Naqhsh- e Jahan Square, this place has historical context and welcomes the students in three fields of architecture, urbanism and industrial design. With a pre-assumption of defining the creative class, this group has the potential to transform into society's super-creative core; therefore, students studying at this university have been selected as a case study for the statistical research.

By considering Naqhsh- e Jahan Square as an urban space, it is in connection with the city and people. The university's connection with urban spaces, the existing creative class connects with the city and promote a culture of creativity. This type of communication is possible through the joining of these two spaces. In this chapter, potentials that attracting the creative class are investigated in this site; and attraction potentials of creative class in this space with interaction relation extracted from criteria of Naqhsh- e Jahan Square (See also Table 3) and the Art University of Isfahan (See also table 4) in form of operational pattern of study are presented (Table 5).

The statistical population

By considering that the purpose of this study is to

Table 3. Factors of Naqhsh- e Jahan Square as a creative cluster in Isfahan city. Source: authors.

Features of creative urban public space	Environmental factors of Naqhsh- e Jahan Square
Participation	Spaces such as art workshops to provide the necessary context for creativity, particularly among the youth;
	Interaction of people with art masters of various crafts in public multipurpose spaces;
	Face to face interaction of people in the square;
	Exchange of ideas due to flexibility;
	Interference of people with artists and craftsmen as they work;
Identity	Support of local and native handicrafts and art works and vernacular art of Isfahan;
	Support of artists and creative people, particularly amount the youth, from creation of art works and activation of urban areas and provision of a suitable context for different galleries and exhibitions;
Economic value	Creative occupations;
	Display and sell creative products;
	Attract tourists and art lovers;
Attraction, Diversity and Urban vitality	Taking some actions to effect on mind and create a sense of place like coach riding and …;
	Green features and fountains and associated spaces;
	The possibility of holding the festivals, ceremonies and gathering people together in the square space;
	24-hour use of the square;
	High quality environmental features in the square;
	Multi-functional space in terms of economic, social and cultural aspects;
	Learning diverse arts at the square and market;
	Context for creation of different events;
	Reception of tribes, nationalities and different cultures;
	Different experts and technologies;
	Many selective activities like carriage;
	Host exhibitions, workshops, galleries, ceremonies for different age groups and families;
	Safety and security of areas associated with the square;
	Easy and fast access to each point of the square;
	Inviting markets and historical monuments in the square area.

Table 4. Factors of the Art University of Isfahan as a creative cluster in Isfahan city. Source: authors.

| Scale	Influential characteristics in attracting creative class at university	Environmental factors of the Art University of Isfahan
Macro	Interface university with the wider community	An environment with a wide range of students, professors and artists;
		An attractive place architecturally for artists;
		Creation of artistic expression in people to nurture talents;
		Preparation of university to enter to market;
		Provide job opportunities due to strong relation of different art majors to work outside the university;
	Land use of university area	Architecture and adaptive function of the space;
		Relation with different arts, such as Contemporary Art Museum and Decorative Art Museum;
Medium	Information and routing system	Relation of students with each other to make generate new ideas;
		Connect the edge of the university with famous mosques and monuments;
		Strong connections with art institutions that cause the University campus to become the second home of these institutions, such as charity art fairs;
	Access to different spaces of university and retain its circulation	Easy and fast walks in areas of the university;
Micro	Retain a safe and secure environment	Walking, sitting, standing and moving in the university;
		Safe and easy walking;
		Maintain security of the university by guards;
		Physical design of totally introverted;
	Creation of successful gathering places	Small squares and yards in the university, influence on holding the exhibitions of visual arts in the universities;
		Admission to performances, theatre and drama studios in Tohid-Khaneh;
		Exposure exhibitions of visual arts to the public in the university arena;
		Present festivals and occasions like exhibitions and galleries, how often and consistently with the presence of students, artists and art lovers.
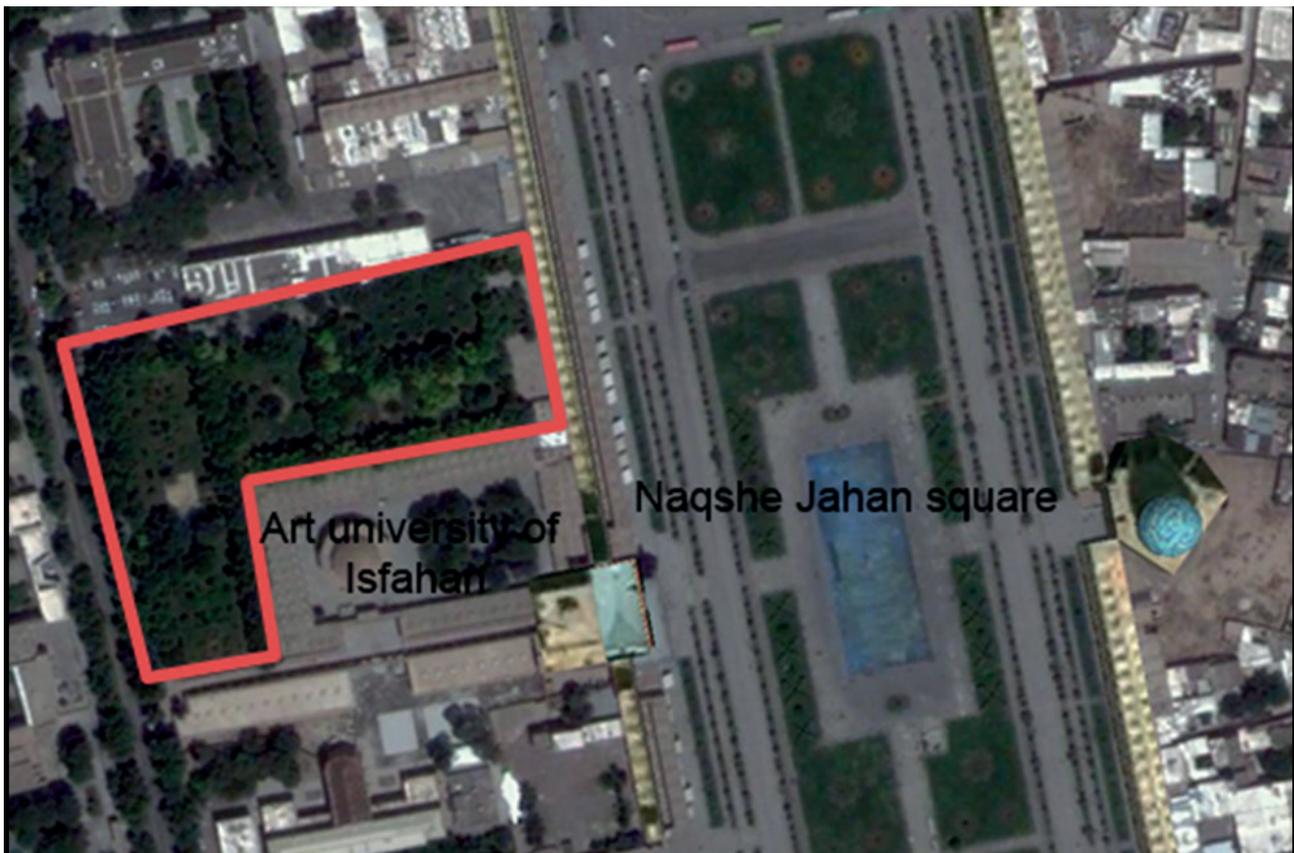
Fig. 1. The joint space between Naqhsh- e Jahan Square and the Art University of Isfahan. Source: Google Earth.

investigate the absorbent place criteria of creative class in the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan; and the academic community, engineers, architects, designers and artists are considered as the creative class. To scrutiny the society and avoiding errors in statistical sample selection, the statistical population, the students of the Art University of Isfahan were selected as user of joint space that were as super-creative core of society or had the potential of changing to a super-creative core. Based on the field observations this group had the most relation with the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan and weren't as passers-by, shopkeepers or tourists that used this space only for passing and there was no possibility of occurring error in statistical sample.

The rate of this statistical population based on the update information in the web site of the Art University of Isfahan was 544 people (www.aui.ac.ir)

that were educating in three fields of architecture, urbanism and industrial design in the educational grades of bachelor, master and Ph. D. The volume of statistical sample by considering the limitation of society volume, based on the Morgan table was calculated 227 people. The questionnaires were distributed randomly among the members of statistical population and in order to remove any ambiguity of participants the test was done presently by recorders in the location of the Art University of Isfahan so that in case of any confusion and question to be answered.

Reliability and validity of study

The first validity test is analysing the KMO test and the significance level of Bartlett. When the amount of K.M.O is more than 0/6, the factor analysis can be done easily. As this amount is more, the appropriation and sampling sufficiency will be more as well;

Table 5. Operational model of research: Potentials of the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan. Source: authors.

Potentials of the joint space between Naqhsh-e Jahan Square and the Art University of Isfahan		Factors of the Art University of Isfahan as a creative cluster					
		Macro		Medium		Micro	
		Interface university with the wider community	Land use of university area	Information and routing system	Access to different spaces of university and retain its circulation	Retain a safe and secure environment	Creation of successful gathering places
Factors of the Naqhsh- e Jahan Square as a creative cluster	Participation	Increasing face-to-face communication in natural green spaces		The possibility for people to question each other about routes and directions		Existence of security, by social monitoring of people	Possibility of holding festivals, workshops and exhibitions for different age groups
	Identity	Close proximity to historical monuments and famous mosques		The presence of structural index elements such as signs		Active street life adjacent to the joint space	Provide a context for out-campus leisure time of students
	Economic value	To attract investment in communication between the university and the city	Investment to convert the space to an open public space of the university	The possibility of making a shortcut from the university to the square through this space			Gathering places for academics, students, artists, retailers, educators, researchers and all residents
	Attraction, Diversity and Urban vitality	- Create experience-based spaces - Service applications around the site - The relationship between the arena with the surrounding context and the main street	- Access to the space at different hours of the day - Attraction of people to the joint space arena	Extensive use of the natural landscape as a space for communication	- Visual access to open green spaces through attractive walking pathways - Dedicate part of the site to bicycle and car parking - Appropriate transportation systems for public welfare and easy access - Legibility of access routes	- Paying attention to lighting and security of the space - An absence of fixed walls - The possibility of walking, sitting, stopping and moving - Existence of cosy but safe places near busy places	- A tolerant environment for all groups and classes - The existence of diverse spaces for performing arts such as music, and providing a context for performing plays

in this study this coefficient is 0/778 (Table 6). The reliability of questionnaire with the amount of Cronbach's alpha coefficient 0/868 was confirmed in the high level. To confirm the reliability of results, goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), root mean square error of approximation (RMSEA) and X2 (chi/df) were used. The pattern enjoys the goodness of fit that the amount of goodness of fit and adjusted goodness of fit be more than 0/6. In this pattern goodness of fit index (GFI) is 0/86, Adjusted Goodness of Fit Index (AGFI) is 0/767, comparative fit index (CFI) is 0/83, root mean square error of approximation (RMSEA) is 0/098, X2 (chi/df) to freedom degree is 2/94. By considering the results of confirmed factor analysis and analysis factors, the measuring patterns have acceptable goodness.

Results of study

In this study, the statistical sample was 227 people that the individual information of statistical sample was expressed in the table 7:

In this research, two complementary methods have been used to analyses statistical data.

The first method was a questionnaire, adjusted by Likert's scale31, which was used to achieve the environmental parameters attraction rate of the creative class. In the second method, a meaningful connection between the variables and the influence of the creative class's environmental parameters attraction on the attraction rate was established.

The reason of using the first method is obtaining the amount of absorbent place criteria of creative

class. The reason of using the second method is to obtain the significant amount of absorbent place criteria of creative class to the amount of attraction. Accordingly, if in the second method the variables are acceptable significantly, the attraction amount of significant variables by using the first method has great influence on weakness and strength of these criteria on the individuals in the site; and finally in this line, the accurate proposal strategies by considering these two methods can be presented.

A) The first method: The attraction amount of absorbent place criteria of creative class

In this method, first the percentage of components of Likert Scale was calculated in table 8; that the most amount of components attraction was related to the identity component in the macro-scale with subcomponent of "Close proximity to historical monuments and famous mosques" with the attraction amount of 47/57% and the attraction, diversity and urban vitality component in medium-scale with subcomponent of "Legibility of access routes

Table 7. Percentage of sex, age, education and field components. Source: authors.

Variable	Type of Variable	Percentage
Sex	Man	46/69
	Woman	53/31
Age	18-22	74
	23-27	19/82
	28-32	6/16
Education	Bachelor	79/29
	Master	18/94
	Ph. D.	1/4
Field	Architecture	41/85
	Urbanisms	33/03
	Industrial Design	14/53
	Other fields	10/57

Table 6. KMO and Bartlett's test of sphericity. Source: Software output.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0/778
Bartlett's Test of Sphericity	Approx. Chi-Square	2092/646
	df	528
	Sig.	0/000

(Entrance to the Art University of Isfahan)" with the attraction amount of 39/67% respectively. The lowest attraction amount of components is related to the identity component in the micro-scale with subcomponent of "Provide a context for out-campus leisure time of students (In the joint Space)" with the attraction amount of 31/27% and the attraction, diversity and urban vitality component in the medium-scale with subcomponent of "Appropriate transportation systems for public welfare and easy access" with attraction amount of 28/63%; and the other components had allocated the percentage attraction from medium to high (Table 8).

B) The second method: Structural equations modeling

In this method, in the investigation processes, structural equations modelling besides assessing the compatibility amount of data and the study model in order to goodness of fit, the significance of relations has been tested in the findings goodness model. Accordingly, "the confirmatory factor analysis" and "structural equations modelling" for assessing the study model have been used.

In the first step, confirmatory factor analysis was used to assess the goodness of measuring models of hidden factors; and it was investigated that how much observed factors measure the accuracy of hidden structure in the study.

In the second step, structural equations modeling was used for assessing the hypothetical pattern.

The used software to calculate "structural equation modeling" is EQS6 software; that is a combination of path analysis, modelling with the hide variables and multiple regression. To investigate with the software, first, the data was prepared with the help of SPSS program; and formulation, assessment, test estimation, amendment and the final validation of theoretical patterns was done by EQS software.

To assess the theoretical research model, this framework (table 5) with the gathered data from the research's case study was analyzed again using the "structural equation modeling" (Table 2).

In pre assessment step of the hypothetical model, the confirmatory factor analysis model was used to measure the goodness of theoretical hidden factors. To achieve the fitness model, the screening was done; and the metrics inconsistent with goodness of series, were deleted. In diagram 2, the large circles represent hidden factors, the rectangles represent the measurement metrics related to that factor; and the small circles represent the amount of no specified variance for each variable (Diagram 2).

In this model, first the rate of attraction with two criteria of desirable place and recommend of place to the others was assessed (Table 9).

Then, this model with the three dimensional assessment model of absorbent criteria was merged; and the share of each dimension in the assessed attraction rate was estimated in three scales of macro, medium and micro (Table 10).

Then, with regard to the metrics that their load factor is less that 0/4 are screening due to their subtle effect in measuring the hidden variable; some of metrics were omitted; and only the effective and significant standards were adjusted based on the table 11.

Base on table 11, in macro scale, two components of participation and attraction, diversity and urban vitality, in medium scale, three components of participation, identity and economic value; and in the micro scale, all four components of participation, identity, economic value and attraction, diversity and urban vitality are defined significantly with load factor higher than 0/4. In fact, due to the low effect of identity and economic value components in the macro scale and the component of attraction, diversity and urban vitality in the medium scale, the only above mentioned components were considered as the effective components (Table 3). Accordingly, the mentioned components in table 11 were cited as the effective components on the absorbent rate, and the absorbent place criteria of creative class in the joint space of Naqhsh- e Jahan Square and the Art University of Isfahan.

Table 8. The attraction amount of absorbent place criteria of creative class in the joint space between Naqhsh- e Jahan Square and the Art University of Isfahan. Source: authors.

	Absorbent place criteria of creative class	**Very low (1)**	**Low (2)**	**Medium (3)**	**High (4)**	**Very high (5)**
1	Desirable place for leisure	10/13	11/89	29/07	25/99	22/90
2	Recommend to friends as a leisure place	14/09	20/70	29/07	20/70	14/97
Participation						
Macro	Increasing face-to-face communication in natural green spaces	8/81	15/85	36/56	30/83	7/92
Medium	The possibility for people to question each other about routes and directions	6/16	28/63	41/40	18/06	4/84
Micro	Existence of security, by social monitoring of people	11/45	22/90	29/95	25/99	9/25
	Possibility of holding festivals, workshops and exhibitions for different age groups	3/52	11/01	27/75	37/44	20/26
Identity						
Macro	Close proximity to historical monuments and famous mosques	0/44	2/64	9/25	40/08	47/57
Medium	The presence of structural index elements such as signs	2/20	8/37	20/70	40/96	27/75
Micro	Active street life adjacent to the joint space	8/37	25/11	37/88	21/14	6/60
	Provide a context for out-campus leisure time of students (In Naqhsh- e Jahan Square)	1/76	7/04	25/11	42/73	23/34
	Provide a context for out-campus leisure time of students (In the Art University of Isfahan)	0/88	7/48	25/55	37/44	28/63
	Provide a context for out-campus leisure time of students (In the joint Space)	22/02	31/27	25/11	17/18	3/96
Economic value						
Macro	To attract investment in communication between the university and the city Investment to convert the space to an open public space of the university	2/64	7/48	26/43	37/88	25/55
Medium	The possibility of making a shortcut from the university to the square through this space	6/60	5/28	22/90	36/12	28/63
Micro	Gathering places for academics, students, artists, retailers, educators, researchers and all residents	3/96	16/74	35/68	29/95	12/77
Attraction, Diversity and Urban vitality						
Macro	Create experience-based spaces	1/76	7/04	29/51	40/08	21/58
	The possibility of manipulation in experience-based spaces	15/85	29/07	29/51	19/82	5/28
	Service applications around the site	15/41	17/62	33/03	26/43	7/48
	The relationship between the arena with the surrounding context and the main street	3/08	17/18	29/95	33/03	16/29
	Access to the space at different hours of the day	20/26	24/22	28/19	19/882	7/48
	Attraction of people to the joint space arena	6/16	12/33	33/48	36/56	11/45
Medium	Extensive use of the natural landscape as a space for communication	1/76	7/48	29/51	46/25	14/97
	Visual access to open green spaces through attractive walking pathways	2/64	15/85	19/95	34/80	16/74
	Dedicate part of the site to bicycle and car parking	15/85	22/02	36/12	18/50	6/60
	Appropriate transportation systems for public welfare and easy access	19/82	28/63	25/99	16/74	8/37
	Legibility of access routes (Entrance to Naqhsh- e Jahan Square)	2/64	8/37	15/85	43/17	29/95
	Legibility of access routes (Entrance to the Art University of Isfahan)	3/52	7/92	20/26	28/19	39/67
Micro	Paying attention to lighting and security of the space	11/45	14/97	29/07	28/19	15/85
	An absence of fixed walls	4/84	18/94	33/03	25/11	14/97
	The possibility of walking, sitting, stopping and moving	1/76	10/57	22/46	47/13	17/18
	Existence of cosy but safe places near busy places	8/81	16/29	16/74	37/88	18/06
	A tolerant environment for all groups and classes	6/61	19/38	31/71	33/03	9/69

Discussion and solutions

According to the obtained results of the first method (Table 8) and the remained components of the second method (Table 11), it can be possible to investigate the effect of these standards in two groups:

The first group of components as in the first method are attracted acceptably, they are considered as positive and effective potential it the site. These components in the second method in the macro scale including the component of the joint space between Naqhsh- e Jahan Square and Ostandari Street, in the middle scale including the components of the presence of structural index elements such as signs such as the view to Alighapo, Chehel setoon and water axis in the site and the possibility of making a shortcut from the university and Ostandari Street to the Naqhsh- e Jahan square through the joint space; and in the micro scale including the components such as the possibility of walking, sitting, stopping and moving, existence of cosy but safe places near busy places and a tolerant environment for all groups and classes.
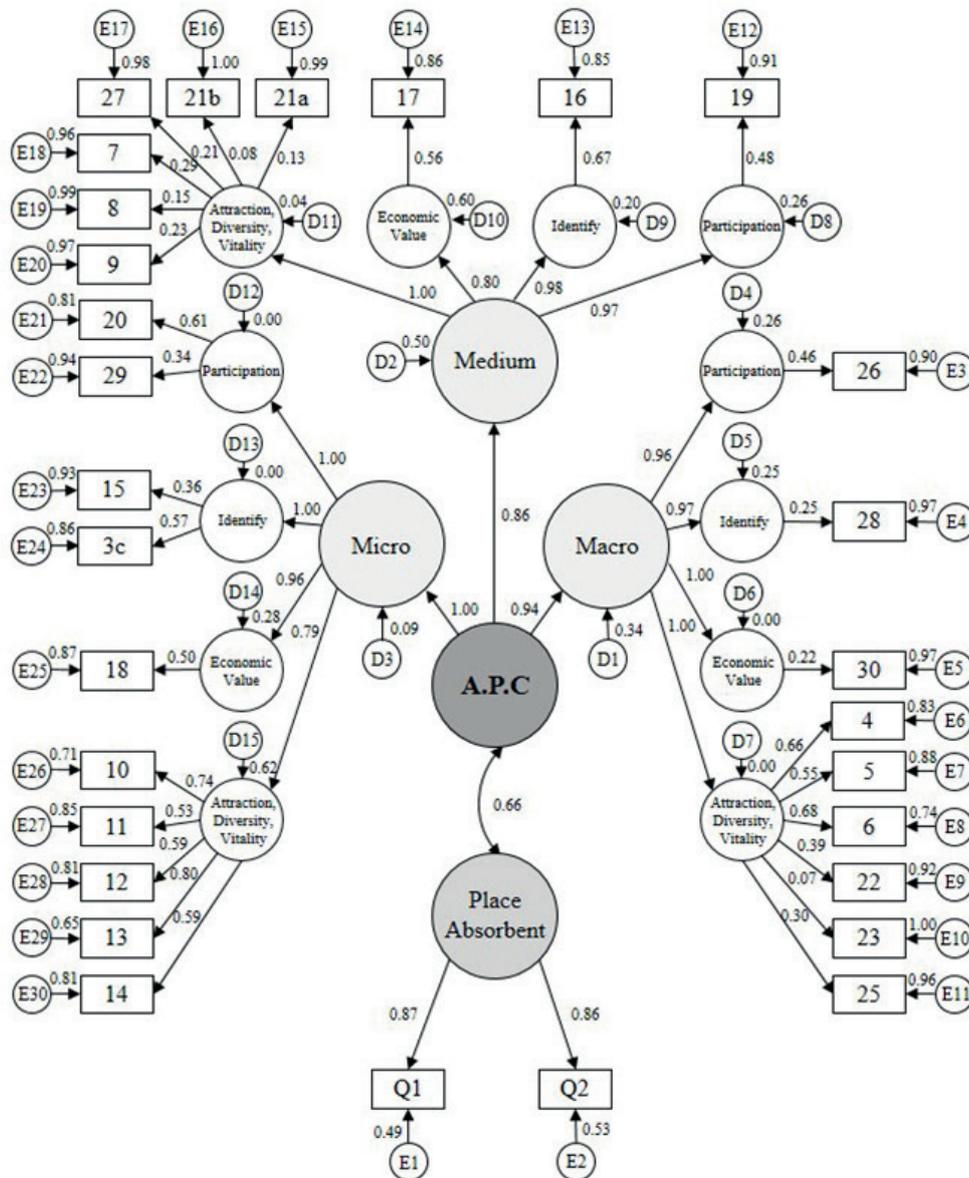

Diagram 2. Structural equation modeling of absorbent place criteria of creative class in the joint space.
Source: authors according to the software output.

This potential as a positive components to change the area of the joint space to an open and public area for university in line with making relation between university and city, and the possibility of attracting the creative class.

The second group of components as they had low and medium results in the first method, it is possible by making some amendment for improving the potentials in the joint space area take a big step for changing this area to the communication joint of university with the people of city. This suggestion is presented in the following table (Table 12):

Table 9. Load factor and a significant level of absorbent rate in the joint space. Source: authors according to table 2.

Measures	Load factor	Sign	P-Value
Desirable place	0/87	Q1	0/000*
Recommend the place to others	0/86	Q2	0/000*
*Regression is significant at 0/01 level.			

Table 10. Load factor and significance level of assessment dimensions of absorbent place criteria of creative class in the joint space. Source: authors according to table 2.

Load Factor	Macro	Medium	Micro	P-Value
Participation	0/96	0/97	1/00	0/000*
Identity	0/97	0/98	1/00	0/000*
Economic value	1/00	0/80	0/96	0/000*
Attraction, Diversity and Urban vitality	1/00	1/00	0/79	0/000*
*Regression is significant at 0/01 level.				

Table 11. Signs of structural equation modeling of absorbent place criteria of creative class in the joint space. Source: authors.

| Scale	Factor	Measures	Load factor
Macro	Participation- Interface with the wider community	Increasing face-to-face communication in natural green spaces	0/46
	Attraction, Diversity and Urban vitality- Interface with the wider community	The relationship between the arena with the surrounding context and the main street	0/68
	Attraction, Diversity and Urban vitality- Land use of area	Access to the space at different hours of the day	0/66
		Attraction of people to the joint space arena	0/55
Medium	Participation- Information and routing system	The possibility for people to question each other about routes and directions	0/48
	Identity- Information and routing system	The presence of structural index elements such as signs	0/67
	Economic value- Information and routing system	The possibility of making a shortcut from the university to the square through this space	0/56
Micro	Participation- Retain a safe and secure environment	Existence of security, by social monitoring of people	0/61
	Identity- Creation of successful gathering places	Provide a context for out-campus leisure time of students	0/57
	Economic value- Creation of successful gathering places	Gathering places for academics, students, artists, retailers, educators, researchers and all residents	0/50
	Attraction, Diversity and Urban vitality- Retain a safe and secure environment	Paying attention to lighting and security of the space	0/74
		An absence of fixed walls	0/53
		The possibility of walking, sitting, stopping and moving	0/62
		Existence of cosy but safe places near busy places	0/80
	Attraction, Diversity and Urban vitality- Creation of successful gathering places	A tolerant environment for all groups and classes	0/59
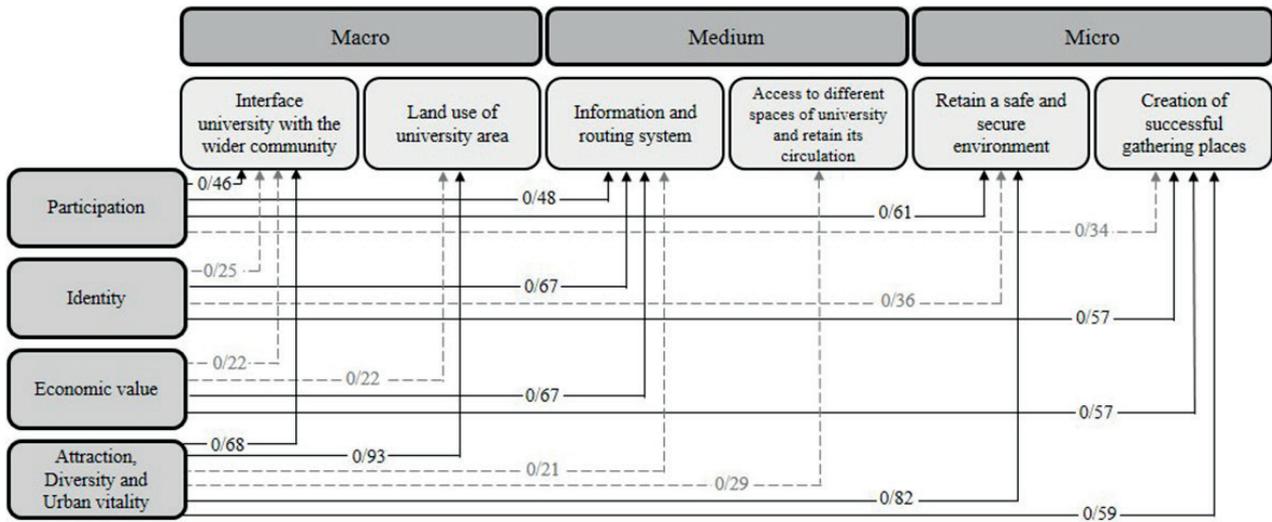
Diagram 3. Scrutinized operational model of study. Source: authors.

Table 12. Solutions in order to convert the joint space into absorbent place of creative class. Source: authors.

Goal		Absorbent criteria		Solutions	
Converting the joint space to the communication joint of the Art University of Isfahan and the city as an urban creative cluster		- Increasing face-to-face communication - The possibility for people to question each other about routes and directions - Existence of security, by social monitoring of people		- Creating gathering clusters - Creating the space for theatrics and running the show and music - making diversity and attraction inside the site	**Social interactions promotion**
		- Access to the space at different hours of the day - lighting and security of the space - An absence of fixed walls		- Creating 24 hours applications - Improving the inter-site routing system - Modification of lighting and lighting system of site	**Increase of security**
		- Existence of large green space with places to sit along the waterfront - Existence of context for informal social interaction		- Modifying the places for sitting - Improving the experience-based spaces - Creating the spaces to hold the temporary exhibitions, exhibitions and workshops	**Upgrade manipulation of user**
		- Provide a context for out-campus leisure time of students		- investing to amend the university politics to create the public area in the context of university	**Communication joint**

Conclusions

In most developed countries, public space around a university that join the university and city could have an important role in attracting a creative class., therefore such areas can easily connect students to the city and the public to the university. But in most universities of Iran, including the Art University of Isfahan, the relationship of the university with the city is compromised by security fences and security entries. So, if it is possible to create a space as a communication joint between university and city, this place can be helpful to reach the mentioned objectives.

To respond to this research's questions with gathered results from the research's case study, in response to the first question, research was achieved with assessing the environmental characteristics of Naqhsh- e Jahan Square and the Art University of Isfahan. Satisfactory qualitative characteristics were attained when the parameters of these two spaces coincide with the environmental parameters of the creative urban clusters. (Tables 3 and 4). In response to the second question, research was achieved by assessing the gathered factors of Naqhsh- e Jahan Square and the Art University of Isfahan's interactive relation with the creative urban clusters. Therefore, potentials of this medial space were achieved, which are considered as the attractive location parameter of the creative class (Table 5). In response to the third question, by using two complementary and consistent quantitative methods, the significance rate of absorbent place criteria of creative class in the joint space that were obtained from the response to the second question were assessed (Tables 8, 10 and 11); and subsequently, some strategies was presented in the line with the quantitative improvement of these components to the attraction rate of creative class.

As absorbent place criteria of creative class in two scales macro and about medium are generalizable to all the statistical population, it means the creative class of Isfahan city, it is possible to by presenting the strategies take step toward improvement of these components in all creative clusters or areas with the creativity potential. However, in micro scale, it is possible to have a significant role in making relation between university and city as well as students, tourists and all the people by presenting the strategies such as improvement of social interaction, increase of security and improvement of experience-based spaces in order to more manipulation in the space and the possibility of manipulation by holding seasonal festivals and exhibitions. What is important is that the creative people prefer a combination of urban locations for living and working and are drawn to exploratory and exciting spaces. In conclusion, these potentials can be transformed in to practicality with proposing solutions using architectural design and/or enabling the chosen site's possibilities.

Endnote

1. The joint space is known as a green space adjacent to the western side of Naqhsh- e Jahan Square and northern and western side of the Art University of Isfahan as the urban public park; this space has been constructed by Isfahan Municipality to beautify city; and is in connect with historical monuments and Naqhsh- e Jahan Square, and adjacent to several major urban axis.

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